What is claimed is:

1. A recording medium on which content stream data is recorded, comprising:

a Stream OBject (SOB) formed with Stream OBject Units (SOBUs) which has a predetermined size and one or more stream packs,

each of the stream packs having an Application Time Stamp (ATS) indicating reproducing time information and an application packet in which content stream data is packed,

wherein each of the SOBUs, excluding a last SOBU and SOBUs having stuffing packets, includes at least two entire ATSs.

2. The recording medium of claim 1, wherein a size of the application packet is small enough so that the SOBUs, excluding the last SOBU and the SOBUs having stuffing packets, includes at least two entire ATSs.

3. The recording medium of claim 2, wherein the size of the application packet satisfies the following equation:

$$AP\_PKT\_SZ \leq SPayload\_SZ \times \{SOBU\_SZ/2\} - \{ cell((N\_AHE + N\_SByte)/2) + ATS\_SZ\},$$

where AP_PKT_SZ denotes the size of the application packet, ATS_SZ denotes a size of an ATS which is formed in units of bytes, SOBU_SZ denotes a size of an SOBU, SPayload_SZ denotes a size of a data space containing information excluding a fixed header area of a stream pack, N_AHE denotes a number of application header extensions of a corresponding SOBU, and N_SByte denotes a number of stuffing bytes of a corresponding SOBU.

4. The recording medium of claim 3, wherein the size of the application packet satisfies the following equation:

$$AP\_PKT\_SZ \leq 2018 \times \{SOBU\_SZ\} - 6$$

where AP_PKT_SZ denotes the size of the application packet and SOBU_SZ denotes the size of the SOBU.

5. The recording medium of claim 4, further comprising:

a MAPping List (MAPL) having an Incremental Application Packet Arrival Time (IAPAT) indicating a duration of the corresponding SOBU as search information indicating which of the SOBUs are included in a corresponding SOB.

6. A recording medium on which content stream data is recorded, comprising:

a Stream OBject (SOB) formed with Stream OBject Units (SOBUs) which has a predetermined size and one or more stream packs,

each of the stream packs having an Application Time Stamp (ATS) indicating reproducing time information and an application packet in which content stream data is packed,

wherein each of the SOBUs, excluding a last SOBU and SOBUs having stuffing packets, includes at least two entire ATSs,

each of the remaining SOBUs having the stuffing packets for correction include a predetermined ATS.

7. The recording medium of claim 6, wherein the stuffing packets for correction are recorded continuously after a last application packet included in the SOB.

8. The recording medium of claim 7, wherein the predetermined ATS included in the stuffing packet for correction has the same value as an ATS included in the last stream pack.

9. The recording medium of claim 8, wherein the stuffing packet for correction further includes a payload in which predetermined data is recorded or no data is recorded.

10. The recording medium of claim 9, wherein a "0" is recorded in the payload.

11. The recording medium of claim 10, wherein the size of the application packet is small enough so that each of the SOBUs, excluding the last SOBU, includes at least two entire ATS.

12. The recording medium of claim 11, wherein the size of the application packet satisfies the following equation:

$AP\_PKT\_SZ \leq SPayload\_SZ \times \{SOBU\_SZ/2\} - \{ cell((N\_AHE + N\_SByte)/2) + ATS\_SZ\}$,

where, AP_PKT_SZ denotes the size of the application packet, ATS_SZ denotes a size of an ATS which is formed in units of bytes, SOBU_SZ denotes a size of an SOBU, SPayload_SZ denotes a size of a data space containing information excluding a fixed header area of a stream pack, N_AHE denotes a number of application header extensions of a corresponding SOBU, and N_SByte denotes a number of stuffing bytes of a corresponding SOBU.

13. The recording medium of claim 12, wherein the size of the application packet satisfies the following equation:

$$AP\_PKT\_SZ \leq 2018 \times \{SOBU\_SZ/2\}-6,$$

where AP_PKT_SZ denotes the size of the application packet and SOBU_SZ denotes the size of the SOBU.

14. The recording medium of claim 13, further comprising:

a MAPping List (MAPL) having an Incremental Application Packet Arrival Time (IAPAT) indicating a duration of the corresponding SOBU as search information indicating which of the SOBUs are included in a corresponding SOB.

15. A recording apparatus to record content stream data as a Stream OBject (SOB) formed with at least one Stream OBject Unit (SOBU) having a predetermined size and one or more stream packs, each of the stream packs having an Application Time Stamp indicating reproducing time information and an application packet in which content stream data is packed, the recording apparatus comprising:

a control unit that generates a mapping list as search information;

a clock generation unit that generates a clock value;

a buffer unit that attaches the clock value provided from said clock generating unit to received content stream data, and outputs the received content stream data by buffering the content stream data;

a stream object unit (SOBU) generating unit which packs the received content stream data output from said buffer unit and generates SOBUs so that each of the SOBUs, excluding a last SOBU, contains at least two entire Application Time Stamps (ATSs); and

a recording unit which records the SOBUs generated by said SOBU generating unit and the mapping list generated by said control unit.

16. The recording apparatus of claim 15, wherein a size of the application packet is small enough so that each of the SOBUs, excluding the last SOBU, includes at least two entire ATSs.

17. The recording apparatus of claim 16, wherein the size of the application packet satisfies the following equation:

$$AP\_PKT\_SZ \leq SPayload\_SZ \times \{SOBU\_SZ/2\} - \{ cell((N\_AHE + N\_SByte)/2) + ATS\_SZ\},$$

where AP_PKT_SZ denotes the size of the application packet, ATS_SZ denotes a size of an ATS which is formed in units of bytes, SOBU_SZ denotes size of an SOBU, SPayload_SZ denotes a size of a data space containing information excluding a fixed header area of a stream pack, N_AHE denotes a number of application header extensions of a corresponding SOBU, and N_SByte denotes a number of stuffing bytes of a corresponding SOBU.

18. The recording apparatus of claim 17, wherein the size of the application packet satisfies the following inequality:

$$AP\_PKT\_SZ \leq 2018 \times \{SOBU\_SZ/2\} - 6,$$

where AP_PKT_SZ denotes the size of the application packet and SOBU_SZ denotes the size of the SOBU.

19. The recording apparatus of claim 18, wherein a MAPping List (MAPL) having an Incremental Application Packet Arrival Time (IAPAT) indicating a duration of the corresponding SOBU is included as search information indicating which of the SOBUs are included in a corresponding SOB.

20. A recording apparatus for recording content stream data as a Stream OBject (SOB) formed with at least one Stream OBject Unit (SOBU) having a predetermined size, the recording apparatus comprising:

a control unit that generates a mapping list as search information;

a clock generation unit that generates a clock value;

a buffer unit attaching the clock value provided from said clock generating unit to received content stream data, and outputting the received content stream data by buffering the content stream data;

a stream object unit (SOBU) generating unit which inserts a stuffing packet for correction having a predetermined Application Time Stamp (ATS) which has a value the same as an ATS among ATSs included in an SOBU located immediately before one of the SOBUs having no corresponding ATS; and

a recording unit which records the SOBUs generated by said SOBU generating unit and the mapping list generated by said control unit.

21. The recording apparatus of claim 20, wherein all SOBUs, excluding a last SOBU, have at least two entire ATSs.

22. The recording apparatus of claim 21, wherein said SOBU generating unit includes a stuffing packet for correction in the last SOBU.

23. The recording apparatus of claim 22, wherein the recording unit continuously records the stuffing packet after a last one of the application packets included in the SOB.

24. The recording apparatus of claim 23, wherein an ATS included in the stuffing packet for correction has a same value as an ATS included in a last stream

pack of the SOBUs.

25. The recording apparatus of claim 24, wherein the stuffing packet for correction further includes a payload in which predetermined data is recorded or no data is recorded.

26. The recording apparatus of claim 25, wherein a "0" is recorded in the payload.

27. A recording apparatus to record an Stream OBject (SOB) having one or more Stream OBject Units (SOBUs), each of the SOBUs has one or more stream packs arrayed in a row and divided into units of a predetermined size and sequentially assigned, each of the stream packs having an Application Time Stamp (ATS) and an application packet in which content stream data is packed, the recording apparatus comprising:

a clock generation unit to generate a clock value;

a buffer unit to attach the clock value provided from said clock generating unit to received content stream data, and to output the received content stream data;

a stream object unit (SOBU) generating unit to generate SOBUs by packing the received content stream data output from said buffer unit;

a control unit to generate a mapping list as search information by regarding a last one of the SOBUs which has no corresponding ATS as having a virtual ATS; and

a recording unit to record the SOBUs generated by said SOBU generating unit and the mapping list generated by said control unit.

28. The recording apparatus of claim 27, wherein said control unit generates a mapping list having an incremental application packet arrival time (IAPAT) obtained by regarding a last application packet included in the SOB as having a virtual ATS.

29. A reproducing apparatus to reproduce content stream data from a recording medium on which content stream data is recorded as an Stream OBject (SOB) formed with at least one Stream OBject Unit (SOBU) having a predetermined

size and one or more stream packs, each of the stream packs having an Application Time Stamp (ATS) indicating reproducing time information and an application packet in which content stream data is packed, each of the SOBUs, excluding a last SOBU and SOBUs having stuffing packets, includes at least two entire ATSs, the reproducing apparatus comprising:

a reading unit to read a mapping list as search information and a corresponding SOBU, where the mapping list has search information generated by regarding the last SOBU as an SOBU having a virtual ATS;

a control unit to control the reading unit to read the corresponding SOBU, referring to the mapping list read by the reading unit;

a clock generating unit to generate a clock value;

an SOBU analyzing unit to extract content stream data by analyzing the SOBU read by said reading unit; and

a buffering unit to output the content stream data from the SOBU analyzing unit by buffering the content stream data based on a clock value provided by said clock generating unit.

30. The reproducing apparatus of claim 29, wherein the mapping list includes an incremental application packet arrival time (IAPAT) indicating a duration of the corresponding SOBU as search information indicating a corresponding SOBU of a corresponding SOB.

31. The reproducing apparatus of claim 30, wherein an ATS included in the stuffing packet for correction is a predetermined ATS and has the same value as an ATS included in a last stream pack of the SOBUs.

32. The reproducing apparatus of claim 31, wherein the stuffing packet for correction further includes a payload in which predetermined data is recorded or no data is recorded.

33. An apparatus comprising:

a recording apparatus to record a stream object formed with at least one stream object units (SOBUs) in which content stream data having one or more stream packs are recorded, each of the stream packs including an application packet having an application time stamp and the content stream data packed therein, said recording apparatus including:

a recording control unit to generate a mapping list as search information;

a clock generation unit to generate a clock value;

a buffer unit to buffer input content stream data, to add the clock value provided by the clock generation unit to the input content stream data, and to output a result;

a Stream Object Unit (SOBU) generating unit to generate the SOBUs, each of the SOBUs, excluding a last one of the SOBUs and SOBUs having stuffing packets, includes at least two entire ATSs; and

a recording unit to record the plurality of generated SOBUs and the mapping list on a recordable recording medium; and

a reproducing apparatus to reproduce data from a reproduceable recording medium, the reproducing apparatus including:

a reading unit to read the mapping list as search information; and

a reproducing control unit to search for a corresponding SOBU by referring to a generated search information and regarding a value of the predetermined application time stamp as the value of an application time stamp for the last one of the SOBUs in the stream object when referring to the read mapping list.